

AMENDMENTS TO CLAIMS

The status of all claims and the text of pending claims, with markings to show current changes relative to the immediately prior version, follows.

1. (Currently Amended) A flow directing device ~~for use in a gas turbine engine~~, comprising:
an airfoil having a leading edge, a trailing edge, a suction side and a pressure side, wherein said suction side and said pressure side each have a gage point;
a wall abutting said airfoil; and
a fillet between said airfoil and wall;
wherein said fillet has an enlarged section at said leading edge, along said suction and pressure sides, and towards said trailing edge and ending adjacent said gage points.
2. (Cancelled)
3. (Original) The flow directing device of claim 1, wherein said fillet extends a distance from said airfoil, a maximum distance located in said enlarged section on said suction side of said airfoil.
4. (Original) The flow directing device of claim 3, wherein said airfoil has a stagnation line and said maximum distance is adjacent said stagnation line.
5. (Original) The flow directing device of claim 3, wherein a minimum of said distance located on a normal section of said fillet, said maximum distance approximately 8 times greater than said minimum distance.

6. (Original) The flow directing device of claim 1, wherein said fillet extends a height from said wall, a maximum of height located in said enlarged section on said suction side of said airfoil.
7. (Original) The flow directing device of claim 6, wherein said airfoil has a stagnation line and said maximum height is adjacent said stagnation line.
8. (Currently Amended) The flow directing device of claim 6, wherein a minimum of said height is located in a normal section of said fillet, said ~~maximum-distance~~ height approximately 10 times greater than said minimum height.
9. (Currently Amended) The flow direction device of claim 6, wherein said airfoil has a span and said ~~maximum-distance~~ height is approximately 30 percent of said span.
10. (Original) The flow directing device of claim 1, wherein said enlarged section has a linear height profile.
11. (Original) The flow directing device of claim 1, wherein said enlarged section has an arcuate height profile.
12. (Original) The flow directing device of claim 1, wherein said enlarged section has a variable curvature.
13. (Original) The flow directing device of claim 12, wherein said enlarged section does not have any slope discontinuities.

14. (Currently Amended) A vane segment, comprising:

at least one platform;

a plurality of airfoils extending from said at least one platform, each of said airfoils having a leading edge, a trailing edge, a suction side and a pressure side, wherein said suction side and said pressure side each have a gage point; and

a fillet between each of said airfoils and said platform;

wherein each of said fillets have an enlarged section at said leading edge, along said suction and pressure sides, and towards said trailing edge and ending adjacent said gage points.

15. (Cancelled)

16. (Original) The vane segment of claim 14, wherein said fillet extends a distance from said airfoil, a maximum of said distance located in said enlarged section on said suction side of said airfoil.

17. (Original) The vane segment of claim 16, wherein said airfoil has a stagnation line and said maximum distance is adjacent said stagnation line.

18. (Original) The vane segment of claim 16, wherein a minimum of said distance is located in a normal section of said fillet, said maximum distance approximately 8 times greater than said minimum distance.

19. (Original) The vane segment of claim 14, wherein said fillet extends a height from said wall, a maximum of said height located in said enlarged section on said suction side of said airfoil.

20. (Original) The vane segment of claim 19, wherein said airfoil has a stagnation line and said maximum height is adjacent said stagnation line.

21. (Currently Amended) The vane segment of claim 19, wherein a minimum of said height is located in a normal section of said fillet, said ~~maximum-distance~~ height approximately 10 times greater than said minimum height.

22. (Currently Amended) The flow direction device of claim 19, wherein said airfoil has a span and said ~~maximum-distance~~ height is approximately 30 percent of said span.

23. (Original) The vane segment of claim 14, wherein said enlarged section has a linear height profile.

24. (Original) The vane segment of claim 14, wherein said enlarged section has an arcuate height profile.

25. (Original) The vane segment of claim 14, wherein said enlarged section has a variable curvature.

26. (Previously Presented) The vane segment of claim 25, wherein said enlarged section does not have any slope discontinuities.

27. (Currently Amended) A method of reducing heat load on an airfoil, comprising the steps of:

providing an airfoil with a proximal end that abuts a wall, a distal end ~~and~~, a medial section between said ends, a leading edge, a trailing edge, a suction side and a pressure side, wherein said suction side and said pressure side each have a gage point;

flowing a gas over said airfoil, said gas adjacent said medial section of said airfoil having a higher temperature than said gas flowing over said proximal end of said airfoil; and

directing said gas from said proximal end of said airfoil to said medial section of said airfoil using a fillet between said airfoil and said wall, said fillet having an enlarged section at said leading edge, along said suction and pressure sides, towards said trailing edge and ending adjacent said gage points.

28. (Cancelled)

29. (New) A flow directing device, comprising:

an airfoil having a leading edge, a trailing edge, a suction side, a pressure side and a stagnation line;

a wall abutting said airfoil; and

a fillet between said airfoil and said wall, said fillet having an enlarged section at said leading edge, along said suction and pressure sides and towards said trailing edge;

wherein said fillet extends a distance from said airfoil and a height from said wall, and at least one of a maximum of said distance and a maximum of said height is located in said enlarged section and offset from said stagnation line.

30. (New) The flow directing device of claim 29, wherein at least one of said maximum distance and said maximum height is offset from said stagnation line on said suction side of said airfoil.

31. (New) The flow directing device of claim 29, wherein said suction side and said pressure side of said airfoil each have a gage point, said enlarged section ending adjacent said gage points.
32. (New) The flow directing device of claim 29, wherein said fillet has normal section, a minimum of said distance located in said normal section, said maximum distance approximately 8 times greater than said minimum distance.
33. (New) The flow directing device of claim 29, wherein said fillet has a normal section, a minimum of said height is located in said normal section, said maximum height approximately 10 times greater than said minimum height.
34. (New) The flow direction device of claim 29, wherein said airfoil has a span and said maximum height is approximately 30 percent of said span.
35. (New) The flow directing device of claim 29, wherein said flow directing device is part of a vane assembly.
36. (New) A flow directing device, comprising:
an airfoil having a leading edge, a trailing edge, a suction side and a pressure side;
a wall abutting said airfoil; and
a fillet between said airfoil and said wall, said fillet having an enlarged section at said leading edge, along said suction and pressure sides and towards said trailing edge, and a normal section:

wherein said fillet extends a distance from said airfoil, a maximum of said distance is located in said enlarged section, a minimum of said distance is located in said normal section, and said maximum distance approximately 8 times greater than said minimum distance.

37. (New) The flow directing device of claim 36, wherein said suction side and said pressure side of said airfoil each have a gage point, said enlarged section ending adjacent said gage points.

38. (New) The flow directing device of claim 36, wherein said maximum distance is located on said suction side of said airfoil.

39. (New) The flow directing device of claim 36, wherein said airfoil has a stagnation line and said maximum distance is offset from said stagnation line.

40. (New) The flow directing device of claim 36, wherein said flow directing device is part of a vane assembly.

41. (New) A flow directing device, comprising:

an airfoil having a leading edge, a trailing edge, a suction side and a pressure side;

a wall abutting said airfoil; and

a fillet between said airfoil and said wall, said fillet having an enlarged section at said leading edge, along said suction and pressure sides and towards said trailing edge, and a normal section;

wherein said fillet extends a height from said airfoil, a maximum of said height is located in said enlarged section, a minimum of said height is located in said normal section, and said maximum height is approximately 10 times greater than said minimum height.

42. (New) The flow directing device of claim 41, wherein said suction side and said pressure side of said airfoil each have a gage point, said enlarged section ending adjacent said gage points.
43. (New) The flow directing device of claim 41, wherein said maximum height is located on said suction side of said airfoil.
44. (New) The flow directing device of claim 41, wherein said airfoil has a stagnation line and said maximum height is offset from said stagnation line.
45. (New) The flow directing device of claim 41, wherein said flow directing device is part of a vane assembly.
46. (New) A flow directing device, comprising:
an airfoil having a leading edge, a trailing edge, a suction side, a pressure side and a span;
a wall abutting said airfoil; and
a fillet between said airfoil and said wall, said fillet having an enlarged section at said leading edge, along said suction and pressure sides and towards said trailing edge, and a normal section;
wherein said fillet extends a height from said airfoil, a maximum of said height is located in said enlarged section, and said maximum height is approximately 30 percent of said span.
47. (New) The flow directing device of claim 46, wherein said suction side and said pressure side of said airfoil each have a gage point, said enlarged section ending adjacent said gage points.
48. (New) The flow directing device of claim 46, wherein said maximum height is located on said suction side of said airfoil.

49. (New) The flow directing device of claim 46, wherein said airfoil has a stagnation line and said maximum height is offset from said stagnation line.
50. (New) The flow directing device of claim 46, wherein said flow directing device is part of a vane assembly.
51. (New) A flow directing device, comprising:
an airfoil having a leading edge, a trailing edge, a suction side and a pressure side;
a wall abutting said airfoil; and
a fillet between said airfoil and said wall, said fillet having an enlarged section at said leading edge, along said suction and pressure sides, and towards said trailing edge;
wherein said enlarged section has a variable curvature without any slope discontinuities.
52. (New) The flow directing device of claim 51, wherein said suction side and said pressure side of said airfoil each have a gage point, said enlarged section ending adjacent said gage points.
53. (New) The flow directing device of claim 51, wherein said fillet extends a distance from said airfoil, a maximum distance located in said enlarged section on said suction side of said airfoil.
54. (New) The flow directing device of claim 51, wherein said airfoil has a stagnation line, said fillet extends a distance from said airfoil, and a maximum of said distance is offset from said stagnation line.

55. (New) The flow directing device of claim 51, wherein said fillet has a normal section and extends a distance from said airfoil, a minimum of said distance is located on said normal section and a maximum of said distance is located on said enlarged section, said maximum distance approximately 8 times greater than said minimum distance.

56. (New) The flow directing device of claim 51, wherein said fillet extends a height from said wall, and a maximum of said height is located in said enlarged section on said suction side of said airfoil.

57. (New) The flow directing device of claim 51, wherein said airfoil has a stagnation line, said fillet extends a height from said wall, and a maximum of said height is offset from said stagnation line.

58. (New) The flow directing device of claim 51, wherein said fillet has a normal section and extends a height from said airfoil, a minimum of said height is located in said normal section of said fillet, a maximum of said height is located in said enlarged section, and said maximum height is approximately 10 times greater than said minimum height.

59. (New) The flow direction device of claim 51, wherein said airfoil has a span, said fillet extends a height from said airfoil, and a maximum of said height is approximately 30 percent of said span.

60. (New) The flow directing device of claim 51, wherein said enlarged section has a linear height profile.

61. (New) The flow directing device of claim 51, wherein said enlarged section has an arcuate height profile.

62. (New) The flow directing device of claim 51, wherein said flow directing device is part of a vane assembly.